10-22-03 OSV

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Case 8594

In the Application of	:	
Curro et al.,	:	
Serial No. 09/886,730	: Group Art Unit : 1771	
Confirmation No. 6712	:	
Filed June 21, 2001	: Examiner : J. L. Befumo	
	:	
For Elastic Laminate Web	:	

DECLARATION UNDER 37 CFR §1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, John J. Curro, do hereby declare that I received a Bachelor of Science in Physics from Xavier University located in Cincinnati, Ohio in 1976, a Master of Science in Materials Science from the University of Cincinnati in 1979, and a Doctoral Degree in Materials Science from the University of Cincinnati, in 1982. I have been employed by The Procter & Gamble Company in Research and Development since September of 1982, and am currently serving as a Research Fellow in the New Platform Technology – Nonwoven Product Development Division. I was inducted into the Procter & Gamble Victor Mills Society in 1998, as the 25th member in the society's history. This select recognition is reserved for the most successful innovators within the company. I am the inventor or co-inventor named on approximately 30 United States patents. I further declare that I have been involved in the development of nonwoven laminates since about 1989.

I am a co-inventor of the above captioned patent application and am therefore familiar with the subject matter contained therein. I am familiar with the Office Action dated March 27, 2003 and the references cited therein. The following testing was done under my direction and supervision to compare a laminate web having an aspect ratio of the bond site greater than about 3 to a typical laminate web having an aspect ratio of the bond sites of about 1. The aspect ratio of 1 is commonly used and disclosed in many nonwoven references.

Production of Laminate Webs:

Four laminate webs were made. The composition of all of the laminate webs are identical, consisting of a single ply of Procter & Gamble Bounty paper laminated between two layers of 30 gsm PE/PP bicomponent spunbond, available from BBA Washougal, WA under the style code: 088YLCO89.

All four laminate webs were thermally bonded together using an ultrasonic scanning bonder. The set-up is shown in Figure 9. Key equipment identification and process conditions are as follows:

Branson Ultrasonic Scanning Bonder:

Power Supply Model 920 BCA with Branson Model 921ae Actuator.

9" (229mm) wide carbide horn with 1/4" (6.5mm) tip radius.

Power Supply Amplitude setting = 60 %.

Downward (z) Stroke pressure setting = 60 psi (4.1 bar).

Downward (z) Stroke endpoint = -0.03125" (0.08mm).

Trigger Pressure = 7 psi (0.48 bar)

Scan speed setting = 8 feet/min (0.04 m/s).

Figs. 1 through 4 are photomicrographs all using the same magnification factor (6X). These figures show laminate webs of identical material composition, bonded ultrasonically using identical process conditions. The difference among samples is the aspect ratio of the bond sites. The aspect ratio of the laminate web in Fig. 1 is 1. This laminate web is to show an aspect ratio typically taught in the prior art, such as Srinivasan et al., and to be used for comparison. Fig. 2, 3, and 4 show laminate webs having an aspect ratio of 5, 10, and 30, respectively. These aspect ratios are desired in the present invention.

Analysis of the Stretched Laminate Webs with Apertures

Figs. 5 through 8 are the same samples after subsequent identical stretching of each of the laminates shown in Figs. 1 through 4. As shown in Fig. 5, it is seen that only partially formed apertures are occasionally observed and that these few partial apertures are highly irregular in shape, size and location across regions of the laminate. The laminate does not have apertures located coincident to the locations of bond sites having an aspect ratio of 1.

In Fig. 6, the laminate is seen to have fully discernable apertures of similar shape and size to each other, and these apertures are located coincident to the locations of the bond sites having an aspect ratio of 5. In Fig. 7, the laminate is seen to have fully discernable apertures

of similar shape and size and is located coincident to the locations of the bond sites having an aspect ratio of 10. In Fig. 8, the laminate is seen to have fully discernable apertures of even more similar shape and size and is located coincident to the locations of the bond sites having an aspect of 30.

Results

The laminate webs in Figs. 6 through 8 display the desired apertures in their desired locations and with discernable clarity. These laminate webs were produced via bond sites having an aspect ratio greater than 3 (that is, 5, 10 and 30, respectively). However, the laminate web in Fig. 5, having been produced via bond sites having an aspect ration less than 3 (that is 1, specifically) do not exhibit the desired plurality of apertures in the laminate web after stretching.

Conclusion:

The Examiner stated in the last Office Action issued that choosing the claimed aspect ratio involves only modifying the size of the aperture, and not critically changing the structure of the laminate. The Examiner also stated that Applicant must show that the claimed shape is critical to the function of the articles and has produced unexpected results which would not be in the prior art or obvious to one of ordinary skill in the art.

The above results show that the aspect ratio of the bond site will critically change the structure of the laminate and allow apertures to form in regions coincident the bond sites. The references in the prior art do not teach or disclose a bond site greater than about 3 to form apertures coincident the bond sites.

This declaration is made with the knowledge that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed true, and further that willful false statements and the like are punishable by fine or imprisonment, or both under 18 USC §1001 and may jeopardize the validity of the application or any patent issuing thereon.

Dec 25, 2003
Date

Declarant

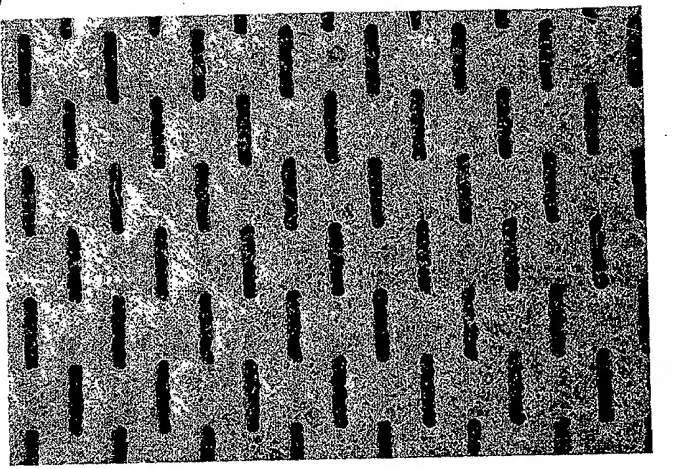

Figure 1. Bond site aspect ratio of 1.

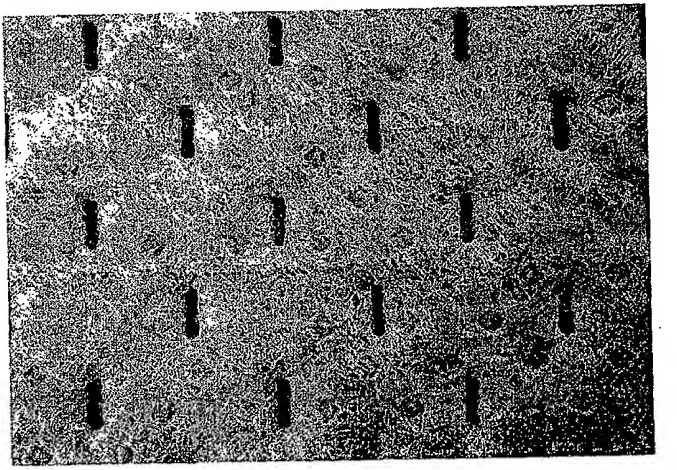

Figure 2. Bond site aspect ratio of 5.

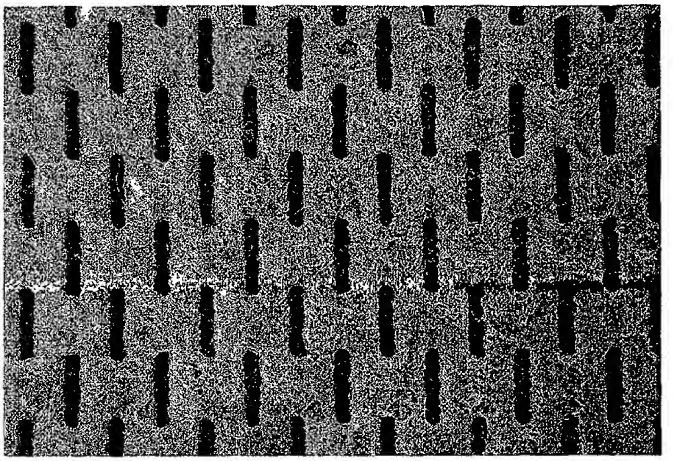

Figure 3. Bond site aspect ratio = 10:1.

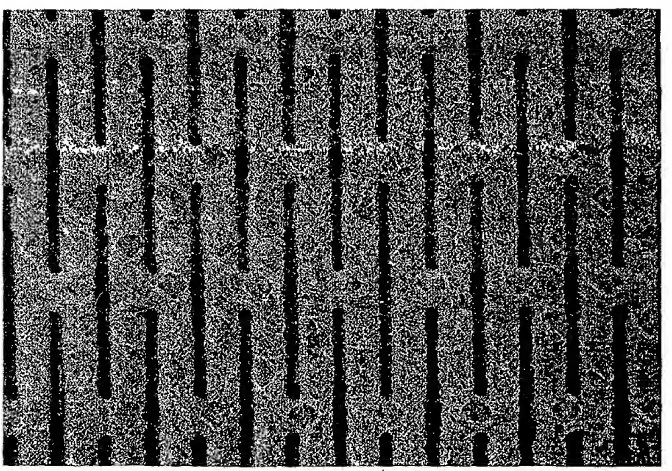

Figure 4. Bond site aspect ratio = 30:1.

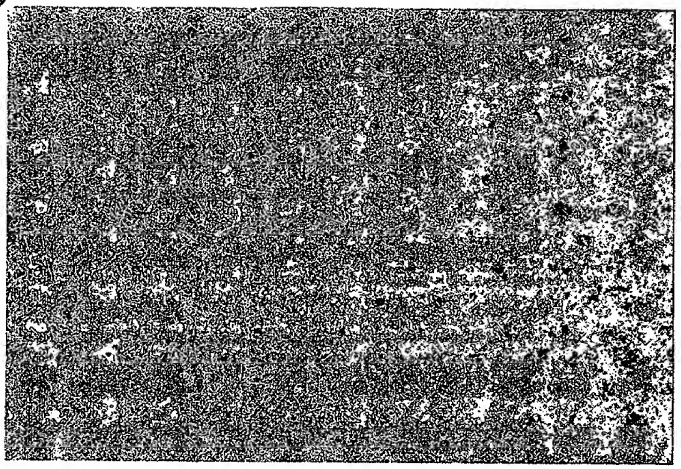

Figure 5. Bond site aspect ratio = 1:1 (after CD Stretching).

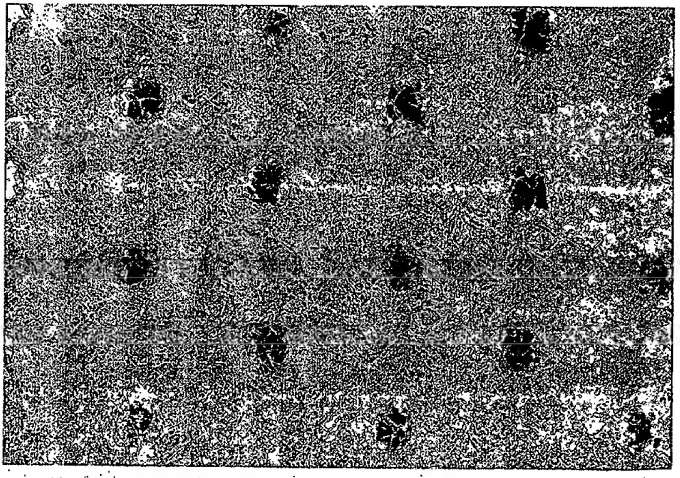

Figure 6. Bond site aspect ratio = 5:1 (after CD Stretching).

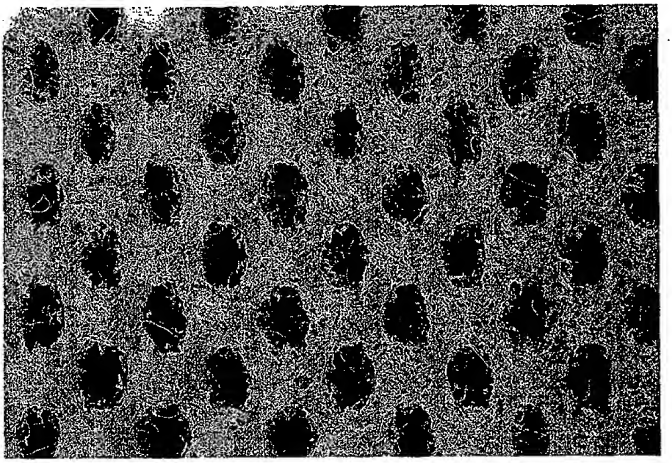

Figure 7. Bond site aspect ratio = 10:1 (after CD Stretching).

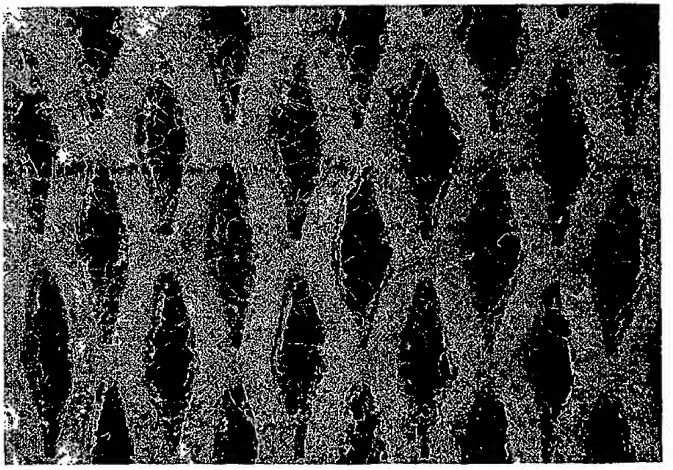

Figure 8. Bond site aspect ratio = 30:1 (after CD Stretching).

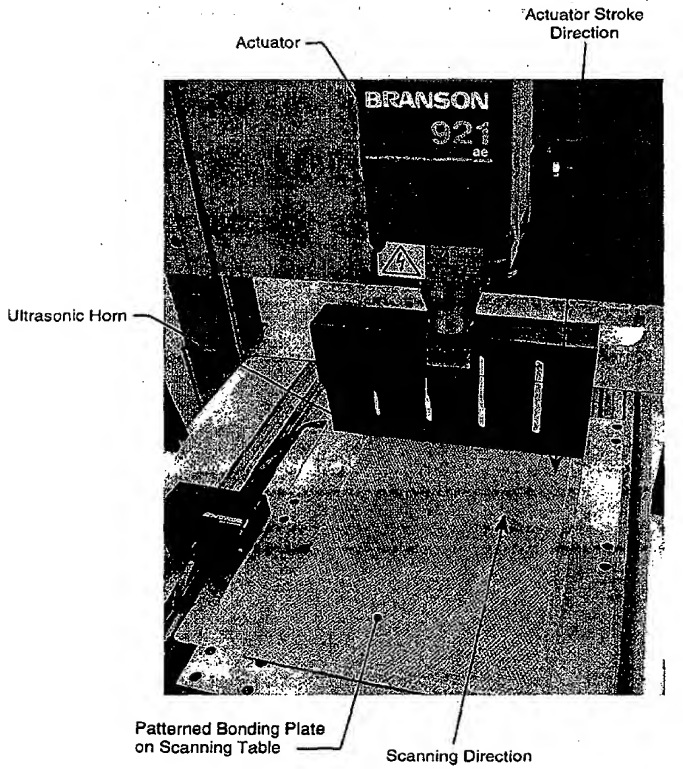

Figure 9. Annotated photograph of the Ultrasonic Scanning Bonder used to make the samples shown in Figures 1-8.